

Application No. 10/609,161
Response to Final Office Action

Customer No. 01933

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE CLAIMS

Claim 9 has been amended to recite swing speed detecting means for detecting a swing speed of the working machine based on a swing angle signal output by the swing angle detector. In addition, claim 9 has been amended to recite the features of the present invention whereby the swing speed reduction starting position is determined based on the swing speed detected by the swing speed detecting means, and whereby the controller outputs the speed reduction command when the swing angle detector detects that the swing angle corresponds to the speed reduction starting position. See, for example, Fig. 10C and the disclosure in the specification at, for example, page 16, lines 2-20.

No new matter has been added, and it is respectfully requested that the amendments to claim 9 be approved and entered.

THE PRIOR ART REJECTION

Claims 9-16 were rejected under 35 USC 102 or under 35 USC 103 as being anticipated by or obvious in view of USP 5,513,551 (previously cited "Morishita"). These rejections,

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however, are respectfully traversed with respect to the claims as amended hereinabove.

According to the present invention as recited in amended independent claim 9, a swing control apparatus is provided for a swingable hydraulic shovel. The swing control apparatus includes a swing angle detector for detecting a swing angle of the work implement, swing speed detecting means for detecting a swing speed of the working machine based on a swing angle signal output by the swing angle detector, and a controller for outputting a speed reduction command to reduce the swing speed gradually from a speed reduction starting position at an angle short of a stroke end of a swing to the stroke end. According to the present invention as recited in amended independent claim 9, the swing speed reduction starting position is determined based on the swing speed detected by the swing speed detecting means, and the controller outputs the speed reduction command when the swing angle detector detects that the swing angle corresponds to the speed reduction starting position.

With this structure, for example, as described in the specification at page 16, lines 7-20, the speed reduction can be automatically adjusted to commence at an angle closer to the stroke end at slower swing speeds, and at an angle farther from the stroke end at higher swing speeds. Thus, the swing speed can

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be placed under the control of the operator for a large portion of the swing stroke, depending on the detected swing speed.

By contrast, it is respectfully submitted that according to Morishita, the hydraulic actuator is driven in accordance with a control signal generated by shifting a control device, such that for example lower shifting speeds of the control device initiate slower operation of the hydraulic actuator (abstract).

As explained at column 7, lines 11-20 of Morishita, for example, when the swing bracket 11 approaches the end of the swing range thereof, the control current supplied to the electromagnetic proportional control valve is decreased to control current I2, and then to zero when the swing bracket 11 reaches the limit position, regardless of the action of the control lever. In addition, as explained at column 7, line 53 to column 8, line 21 of Morisita, for example, when the swing bracket 11 approaches a stored target position, the control current is lowered to a predetermined control current I4, and then to zero when the swing bracket 11 reaches the target position. See Figs. 7-10.

According to Morishita, moreover, the graphs shown in Figs. 7 and 10 thereof may be shifted based on the initial shift position of the control lever, or the rotation of the engine of the construction vehicle, or the position of the stored target

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position. See column 7, lines 21-36 and column 8, lines 55-63 of Morishita.

It is respectfully submitted, however, that Morishita does not disclose, teach or suggest that the swing speed reduction starting position is determined based on a detected swing speed of the work implement, in the manner of the present invention as recited in amended independent claim 9. Indeed, it is respectfully submitted that Morishita does not at all disclose, teach or suggest detecting the swing speed of the working machine based on a swing angle signal output by the swing angle detector, in the manner of the swing speed detection means recited in amended independent claim 9.

In view of the foregoing, it is respectfully submitted that the present invention as recited in amended independent claim 9, as well as claims 10-12 depending therefrom, clearly patentably distinguishes over Morishita, taken singly or in combination with any of the other prior art references of record, under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

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If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

/Douglas Holtz/

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